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EXAMINER

SONG, HOSUK

ART UNIT

PAPER NUMBER

2135

DATE MAILED: 03/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/672,691

Applicant(s)

FACCIN ET AL.

Examiner

Hosuk Song

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 19-33 is/are rejected.
- 7) ☐ Claim(s) 12-18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 September 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-5,9-11,19-21,23-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daly et al(US 5,930,362) in view of Sayers et al(US 6,687,243).

Claim 1: Daly's patent teaches generating at least one second ciphering key for a second cellular system, at least one ciphering key generated by an interoperability authentication center at a first cellular and by a mobile device separately in (fig.1 and col.4,lines 26-29,37-50). Daly discloses encrypting traffic between the mobile device and the first cellular system using at least one first ciphering key for the first cellular system in (col.4,lines 47-50). Daly does not specifically disclose performing handoff by the mobile device from the first cellular system to the second cellular system, traffic between the mobile device and the second cellular system being encrypted using the at least one second ciphering key, wherein ciphering of the traffic is maintained during handoff. Sayers' patent discloses performing handoff by the mobile device in (col.2,lines 13-24). It would have been obvious to person of ordinary skill in the art at the time invention was made to employ handoff function as taught in Sayers with cellular system disclosed in Daly in order to relieve the load on a base station that has exhausted its traffic carrying capacity or where poor quality communication occurring. Handoff allows transfer for a particular user from the base station for the first cell to the base station for the second cell.

Further, it would have been obvious to person of ordinary skill in the art to recognize that encrypting traffic between two systems would have been highly desirable in order to conduct secure and reliable communication.

Claim 2: Daly's patent discloses authentication center storing security related algorithms and information for at least one cellular system including the second cellular system in (col.4,lines 26-50).

Claim 3: Neither Daly nor Sayers specifically discloses Universal Mobile Telecommunications System(UMTS) system. Official notice is taken that UMTS is well known in the art. One of ordinary skill in the art would have been motivated to employ UMTS in order support high-data-rate multimedia services. UMTS standards are part of the 'IMT-2000' efforts at defining global standards for 'third generation' mobile communications systems.

Claim 4: Daly does not specifically disclose GSM system. Sayers disclose GSM in (col.2,lines 40-57). It would have been obvious to person of ordinary skill in the art at the time invention was made to employ GSM system as taught in Sayers with cellular system disclosed in Daly because GSM provides advantages in terms of signal quality, service charge, international roaming support, frequency band utilization efficiency.

Claim 5: Neither Daly nor Sayers specifically discloses Interim Standard(IS). Official notice is taken that Interim Standard is well known in the art. One of ordinary skill in the art would have been motivated to employ IS in order to provide very flexible technical, service and investment options for subscribers and operators.

Claims 9-11: see claims 1-2 above.

Claims 19,23: Daly's patent teaches generating at least one second ciphering key for a second cellular system, at least one ciphering key generated by an interoperability authentication center at a first cellular and by a mobile device separately in (fig.1 and col.4,lines

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26-29,37-50). Daly discloses encrypting traffic between the mobile device and the first cellular system using at least one first ciphering key for the first cellular system in (col.4,lines 47-50).

Daly does not specifically disclose performing handoff by the mobile device from the first cellular system to the second cellular system, traffic between the mobile device and the second cellular system being encrypted using the at least one second ciphering key, wherein ciphering of the traffic is maintained during handoff. Sayers' patent discloses performing handoff by the mobile device in (col.2,lines 13-24). It would have been obvious to person of ordinary skill in the art at the time invention was made to employ handoff function as taught in Sayers with cellular system disclosed in Daly in order to relieve the load on a base station that has exhausted its traffic carrying capacity or where poor quality communication occurring. Handoff allows transfer for a particular user from the base station for the first cell to the base station for the second cell. Further, it would have been obvious to person of ordinary skill in the art to recognize that encrypting traffic between two systems would have been highly desirable in order to conduct secure and reliable communication.

Claim 20: Neither Daly nor Sayers specifically discloses Universal Mobile Telecommunications System(UMTS) system. Official notice is taken that UMTS is well known in the art. One of ordinary skill in the art would have been motivated to employ UMTS in order support high-data-rate multimedia services. UMTS standards are part of the 'IMT-2000' efforts at defining global standards for 'third generation' mobile communications systems.

Claim 21: Neither Daly nor Sayers specifically discloses Interim Standard(IS). Official notice is taken that Interim Standard is well known in the art. One of ordinary skill in the art would have been motivated to employ IS in order to provide very flexible technical, service and investment options for subscribers and operators.

Claims 24,27: Daly's patent teaches generating at least one second ciphering key for a second cellular system, at least one ciphering key generated by an interoperability authentication center at a first cellular and by a mobile device separately in (fig.1 and col.4,lines 26-29,37-50). Daly discloses encrypting traffic between the mobile device and the first cellular system using at least one first ciphering key for the first cellular system in (col.4,lines 47-50). Daly does not specifically discloses performing handoff by the mobile device from the first cellular system to the second cellular system, traffic between the mobile device and the second cellular system being encrypted using the at least one second ciphering key, wherein ciphering of the traffic is maintained during handoff. Sayers' patent discloses performing handoff by the mobile device in (col.2,lines 13-24). It would have been obvious to person of ordinary skill in the art at the time invention was made to employ handoff function as taught in Sayers with cellular system disclosed in Daly in order to relive the load on a base station that has exhausted its traffic carrying capacity or where poor quality communication occurring. Handoff allows transfer for a particular user from the base station for the first cell to the base station for the second cell.

Claims 25,28: Neither Daly nor Sayers specifically discloses Universal Mobile Telecommunications System(UMTS) system. Official notice is taken that UMTS is well known in the art. One of ordinary skill in the art would have been motivated to employ UMTS in order support high-data-rate multimedia services. UMTS standards are part of the 'IMT-2000' efforts at defining global standards for 'third generation' mobile communications systems.

Claims 26,29: Neither Daly nor Sayers specifically discloses Interim Standard(IS). Official notice is taken that Interim Standard is well known in the art. One of ordinary skill in the art would have been motivated to employ IS in order to provide very flexible technical, service and investment options for subscribers and operators.

Claims 30,33: Daly's patent teaches generating at least one second ciphering key for a second cellular system, at least one ciphering key generated by an interoperability authentication center at a first cellular and by a mobile device separately in (fig.1 and col.4,lines 26-29,37-50). Daly discloses encrypting traffic between the mobile device and the first cellular system using at least one first ciphering key for the first cellular system in (col.4,lines 47-50). Daly does not specifically disclose performing handoff by the mobile device from the first cellular system to the second cellular system, traffic between the mobile device and the second cellular system being encrypted using the at least one second ciphering key, wherein ciphering of the traffic is maintained during handoff. Sayers' patent discloses performing handoff by the mobile device in (col.2,lines 13-24). It would have been obvious to person of ordinary skill in the art at the time invention was made to employ handoff function as taught in Sayers with cellular system disclosed in Daly in order to relieve the load on a base station that has exhausted its traffic carrying capacity or where poor quality communication occurring. Handoff allows transfer for a particular user from the base station for the first cell to the base station for the second cell. Further, it would have been obvious to person of ordinary skill in the art to recognize that encrypting traffic between two systems would have been highly desirable in order to conduct secure and reliable communication. Daly's patent discloses authentication center storing security related algorithms and information for at least one cellular system including the second cellular system in (col.4,lines 26-50).

Claim 31: Neither Daly nor Sayers specifically discloses Universal Mobile Telecommunications System(UMTS) system. Official notice is taken that UMTS is well known in the art. One of ordinary skill in the art would have been motivated to employ UMTS in order support high-data-rate multimedia services. UMTS standards are part of the 'IMT-2000' efforts at defining global standards for 'third generation' mobile communications systems.

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Claim 32: Neither Daly nor Sayers specifically discloses Interim Standard(IS). Official notice is taken that Interim Standard is well known in the art. One of ordinary skill in the art would have been motivated to employ IS in order to provide very flexible technical, service and investment options for subscribers and operators.

2. Claims 6,22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daly et al(US 5,930,362) in view of Sayers et al(US 6,687,243) and further in view of Nodoushani et al(US 6,114,849).

Claims 6,22: Neither Daly nor Sayers specifically discloses SME/VP. Nodoushani's patent discloses SME/VP in (col.10,lines 39). It would have been obvious to person of ordinary skill in the art at the time invention was made to employ SME/VP because it supports authentication over multiple air interfaces(AMPS,TDMA,CDMA). Further, SME/VP provides pre-call validation of (MS) that does not require user intervention.

3. Claims 7,8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daly et al(US 5,930,362) in view of Sayers et al(US 6,687,243) and further in view of Austin et al(US 6,393,270).

Claims 7,8: Neither Daly nor Sayers does not specifically disclose CAVE algorithm. Austin's patent discloses CAVE algorithm in (col.2,lines 25-57). It would have been obvious to person of ordinary skill in the art at the time invention was made to employ CAVE algorithm as taught in Austin with cellular system disclosed in Daly and Sayers in order to verify the identify of a mobile through challenge/response mechanism so that key can be protected and two entities can conduct secure communication over the network.

***Allowable Subject Matter***



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4. Claim 12 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 13-18 are allowed because of dependency.

***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hosuk Song whose telephone number is 703-305-0042. The examiner can normally be reached on Tue-Fri from 6:00 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Vu can be reached on 703-305-4393. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
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